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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Larry R. Dalton

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EXAMINER

METZMAIER, DANIEL S.

ART UNIT

PAPER NUMBER

1732

DATE MAILED: 06/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.	Applicant(s)
09/912,444	DALTON ET AL
Examiner	Art Unit
Daniel S. Metzmaier	1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.135(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 7/2/02; 11/22/02; 9/11/03; & 3/2/04; and 1/23/2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 9-64 is/are pending in the application.
- 4a) Of the above claim(s) 11-12, 14, 16, 19-20, 23-28, 30 and 35-64 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-10, 13, 15, 17-18, 21-22, 29 and 31-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB-08)  
Paper No(s)/Mail Date 01/25/2002; 07/02/2002; and 11/22/2002.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

Claims 9-64 are pending. Claims 11-12, 14, 16, 19-20, 23-28, 30 and 35-64 have been withdrawn as directed to non-elected inventions and/or non-elected species.

### *Election/Restrictions*

1. Applicant's election of Group I and species defined by  $\pi$ -conjugated polyene bridge equal to fused dithiophene group, phenyl amine (e.g., dialkylaminophenyl) donor, and trifluoromethyl sulfonyl-substituted furan acceptor in Papers filed September 11, 2003 and March 2, 2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 11-12, 14, 16, 19-20, 23-28, 30 and 35-64 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention and non-elected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper filed September 11, 2003 and March 2, 2004.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 9-10, 13, 15, 17-18, 21-22, 29 and 31-34 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for compounds disclosed with a disclosed  $\pi$ -electron donor groups,  $\pi$ -conjugate polyene

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bridge and  $\pi$ -electron acceptor groups, does not reasonably provide enablement for all compounds which may meet applicants' claimed functional language. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. Applicants' claims read on compound, which applicants have neither disclosed nor contemplated that have the electro-optic properties set forth in the claims. No single claim specifically defines each of the groups broadly defined in the independent claim. While the specification sets forth materials, which are  $\pi$ -electron donor groups,  $\pi$ -conjugate polyene bridge and  $\pi$ -electron acceptor groups; applicants' have not disclosed all materials reading on said genus.

Applicants' claims are an invitation for experimentation for the skilled artisan to determine what materials meet the scope of the claims. Applicants disclose (page 9, lines 24-28) the compounds representative of the compounds having a high electro-optic coefficient include those of example 4. Applicants further disclose compounds having an electro-optic coefficient less than the claimed value.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

6. Claims 9-10, 13, 15, 17-18, 21-22, 29 and 31-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear how the  $\pi$ -electron donor groups,  $\pi$ -conjugate polyene bridge and  $\pi$ -electron acceptor

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groups are conjugated. It is unclear what are the metes and bounds of the claimed invention since the compound structures are not adequately delineated.

In claims 15, 22 and 31-34; the definition of "R" as the rest of the compound is vague and indefinite.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

8. Claims 9-10, 13, 15, 17 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Dalton et al, 6,067,186. See figures examples and claims. Particular attention is directed to figure 6.

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9. Claims 9-10, 13, 15, 17 and 18 are rejected under 35 U.S.C. 102(a) as being anticipated by Pacific Wave Ind Inc, WO 2000/09613<sup>1</sup>. See figures examples and claims. Particular attention is directed to figure 6.

10. Claims 9-10, 13, 15, 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Tiers et al, 5,676,884. See at least Table 1, particularly Compound No. 33d-33h, and 34.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 9, 13, 17, 21 and 29 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Varanasi et al, US

<sup>1</sup> Corresponds to Dalton et al, US 6,067,186, and cited in applicants' IDS.

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5,514,799. Varanasi et al (example 15) discloses compounds reading on those claimed. The properties are an empirical property that would have been expected for the compounds that otherwise read on the claimed compounds.

To the extent Varnesi et al differs from claims 9, 13, 17, 21 and 29 in the specific properties, some variation in properties would have been expected and said properties have not been shown to be unobvious for the scope of the claimed subject matter. "A rejection under 35 U.S.C. 102/103 can be made when the prior art product seems to be identical except that the prior art is silent as to an inherent characteristic." See MPEP 2112.

14. Claims 18 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Varanasi et al, US 5,514,799, in view of Cabrera et al, US 5,432,286.

Varanasi et al (example 15) discloses compounds reading on those claimed as set forth in the above rejection over the same reference, which is incorporated herein.

To the extent Varnesi et al differs from claim 22 in R<sub>5</sub> and R<sub>6</sub> substituents or the bulky substituents of claim 18, said substituents were within the ordinary skill level of one having ordinary skill in the art at the time of the invention as shown to be convention in the Cabrera et al references (abstract and examples).

***Allowable Subject Matter***

15. Claims limited to the elected species is deemed allowable. See for example, the compounds of figure 21 and 47.

16. The following is a statement of reasons for the indication of allowable subject matter: the prior art does not disclose or fairly suggest the compounds .


**Conclusion**

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (703) 308-0451. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Daniel S. Metzmaier  
Primary Examiner  
Art Unit 1712

DSM